Synergistic effects of *Punicaria adoxa* (Daun Kasim) leaf extracts with standard antibiotics on pathogenic bacteria (Arabic)

Department of Basic Medical Sciences, Kulliyyah of Medicine, International Islamic University Malaysia (IIUM), Kuantan Pahang, Malaysia

Aim: The aim of this study was to evaluate the antibacterial activity of different types of *Punicaria adoxa* leaf extracts in combination with standard antibiotics. The antibacterial activity of the extracts was evaluated using agar disc diffusion and the Kirby Bauer method.

Methods: Two types of extracts were used in this study: 1.) *Punicaria adoxa* leaf extract (PE) 2.) *Punicaria adoxa* leaf extract in combination with metronidazole (P+E+MNZ). The extracts were tested against four bacteria strains: Streptococcus pneumoniae, Enterococcus faecalis, Staphylococcus aureus, and Pseudomonas aeruginosa.

Results: The results showed that the combination of *Punicaria adoxa* leaf extract with metronidazole exhibited a higher antibacterial activity than the individual extracts.

Conclusion: The results of this study suggest that *Punicaria adoxa* leaf extract can be used as a natural alternative to conventional antibiotics in the treatment of bacterial infections.

Keywords: *Punicaria adoxa*, leaf extract, antibacterial activity, combination therapy.